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2 An experiential learning approach: implementing a group-based research project as the main learning vehicle in a first year Microeconomics module

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Abstract

The overall purpose of this Teaching Fellowship project is to determine whether a current bolt-on continuous assessment research project can be developed further to become the main learning vehicle in a first year Microeconomics module. The main research objectives are:

- Can a group-based research project become the main learning vehicle in a first year Microeconomics module?
- Can such a project provide the generic skills relevant to a modern society?
- Can such a project be facilitated by a wiki?

There are two main sections to the extensive range of literature reviewed. One is that which considers the wide range of official reports, at national and international level, that have made a strong case for transformation of the higher education sector with the view to developing graduates possessing a wide range of generic skills such as critical thinking, problem solving and team working. The other is the extensive body of literature covering Cognitive, Constructivist and Social Constructivist pedagogic theories, which include within them approaches such as experiential learning, which focus on the development of these types of skills. This Teaching Fellowship project is conceived as a multi-stage exercise. The current Microeconomics research project involves groups of four students analysing the Irish housing market from 1994 onward.

Based on this analysis students have compiled substantial written reports (average 7,000–9,000 words) and gone on to create and deliver live presentations. Close examination of these research reports and the Reflective Diaries of individual students reveals that the research project is effective in developing many of the generic skills previously noted. The next stage of the process, based on the literature reviewed and the examination of the research project material, is to establish the modified research project as the main vehicle of the Microeconomics module in the first semester of the academic year 2013–2014 and test its effectiveness in developing further the required generic skills.

Key words: *experiential learning, generic skills, group work, peer review*

Background

Since 2008 I have been developing a group-based research project as a significant continuous assessment element of a first year module in Microeconomics, in a general business course in DIT. Up to the present the research project has functioned as follows. Content in the module is delivered in a more or less standard lecture format. When sufficient core material has been covered, the c.160 students in the class are divided into groups of four and provided with a detailed brief based on their task of analysing the crisis in the Irish housing market from 1994 to the present. Equipped with an understanding of the main drivers of the market for houses, i.e. demand and supply and the key relevant variables, price, income, interest rates, costs etc., the groups then research a wide range of sources, a task increasingly carried out online. A substantial written report, averaging 7,000–9,000 words, and a physical presentation are then completed. The research project, up to now, has counted for 30% of the overall mark for the module, with 10% going to a weekly online self-assessment exercise, and the remaining 60% going to a written exam.

The overall purpose of the Teaching Fellowship project is to determine whether this bolt-on continuous assessment project can become the main learning vehicle for the module. The Fellowship project is being developed as a multi-stage process whereby the current stage will facilitate the implementation of the modified research project which will be put in place and tested in the first semester of the academic year 2013–2014.

The main research objectives are :

- Can a group-based research project become the main learning vehicle in a first year Microeconomics module?
- Can such a project provide the generic skills relevant to a modern society?
- Can such a project be facilitated by a wiki?

Theoretical framework

Globalisation, deregulation, the information-technology revolution and the associated expansion of trade, capital flows and global supply chains are widely recognised as key drivers of fundamental change in the global economy since the early 1980s, which in turn have brought about widening income gaps between the more and the less well educated, between and within countries (Beddoes 2012). Ireland, one of the most open economies in the world, relying heavily on exports produced by hi-tech foreign multinationals, lays great stress on its Higher Education (HE) sector in order to provide the appropriate highly trained manpower and remain internationally competitive (Forfás 2012). At the level of the individual, the widening income gap creates a strong incentive to participate in HE, especially due to the Great Recession. As Tremblay, Lalancette and Roseveare (2012) record in a report commissioned by the Organisation for Economic Co-operation and Development (OECD), participation in higher education had soared by 25 percentage points, from 37% in 1995 to 62% in 2010. It is notable that the growth is accompanied by a high rate of attrition, calculated at 31% in a range of OECD countries.

These trends have led to an increase in nominal funding of HE in many OECD countries over the period. However the increased participation rates have resulted in a lower expenditure per student (Sanyal and Martin 2006). As a result Higher Education Institutions (HEIs) increasingly struggle to do more with less. Not surprisingly, greater accountability has become a key issue for many countries (Johnstone 2004; Sanyal and Martin 2006). Since the 1990s, the state, as provider of a large part of the funds for HE, has tended to exert a greater influence on the missions and systems of HEIs, relative to academic authority, which is derived from the possession of the professional knowledge required (Sanyal and Martin 2006). Sharply decreased tax revenues and widening budget deficits clearly accelerated this pressure in Ireland in recent years.

In this context, many reports on the HE sector have been prepared by individual countries and international institutions such as the OECD and the European Commission (EC). In general, whilst noting the social dimensions to education, these reports tend to lay most focus on the role of education in supporting economic objectives. An EC report entitled *New Skills for New Jobs: Action Now*, notes that young people often feel unprepared for the world of work and argues that the "missing link, in part, lies in a set of desirable skills such as the ability to work quickly, analyse and organise complex information, take responsibility, handle crisis, manage risk and take decisive action" (EC 2010: 27). It goes on to argue that the acquisition of such skills requires more "innovative approaches, such as, learning-by-doing or project-based learning" (ibid.).

These views tend to be echoed in reports at the national level. For example, in the Irish case, the National Strategy for Higher Education report by the DES (2011) makes the following recommendation, amongst many other similar ones: "Undergraduate and postgraduate education should explicitly address the generic skills required for effective engagement in society and in the workplace" (p.62). In line with this general approach, the *DIT Teaching, Learning and Assessment Strategy 2011–2014* (2011) indicates as a strategic priority the "development of key skills and competencies".

Some commentators, such as Professor Tom Dunne, have decried this economy-oriented approach to education and the increasing intrusion of "neo-liberalism" and "managerialism" into HE (Dunne 2013). However, a fascinating paper by Riel Miller (2008), an economist and futurist who later became Head of Foresight in UNESCO, examines the historic relationship between the educational system and the dominant economic paradigm. He shows the close link between the approach to schooling in the traditional education system, eloquently deconstructed by Ken Robinson (2006), and the industrial model of the economy. Looking to the future, the thrust of his predictions would appear to be that an increasingly knowledge-based economy is likely to require levels of learning that would be constrained by the traditional model associated with the industrial economy.

However academics may feel about the intrusion of "neo-liberalism" and "managerialism", it may be that as a result of a changing economic paradigm a consequent paradigm shift could also be underway in HE that might offer an arguably more meaningful experience for educators as well as learners. The traditional education system described by Riel Miller and Ken Robinson is associated with the still-influential approach of Behaviourism, informed by the work of Watson, Skinner, Tyler and others (see Kolb 1984; Carlile and Jordan 2005). However, the needs of a knowledge-based society, which awards primacy to generic skills, such as critical thinking and problem solving, arguably require a very different approach. The pedagogical approach that is more likely to be effective is not new but it may be the case that, historically, its time has come.

Cognitivism, Constructivism and Social Constructivism bring new perspectives to pedagogy that recognise a more central position for the learner in her own learning. Piaget and Ausebel (Cakir 2008: 194) identified the importance of the preexisting schema that learners bring to the experience of education and the degree to which their learning results from interaction with their environment. Vygotsky (1978) took this further in developing his now well-known zone of proximal development (ZPD) model, in which he identified "the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers" (p.86), thus opening educators' minds to the possibilities of peer and group learning.

John Dewey (1897) had previously written of the importance of learning by doing. His work, and that of Piaget and Kurt Lewin were brought together in the Experiential Learning Model (ELM) of David Kolb (1984). Kolb's work has since become highly influential in the movement towards learner-centred education. As depicted in Figure 2.1, it lays emphasis on the importance of prior knowledge, engagement with concrete experience, reflection on that experience, and re-engagement with the concrete experience in a never-ending circle of continuous learning (Kolb 1984).

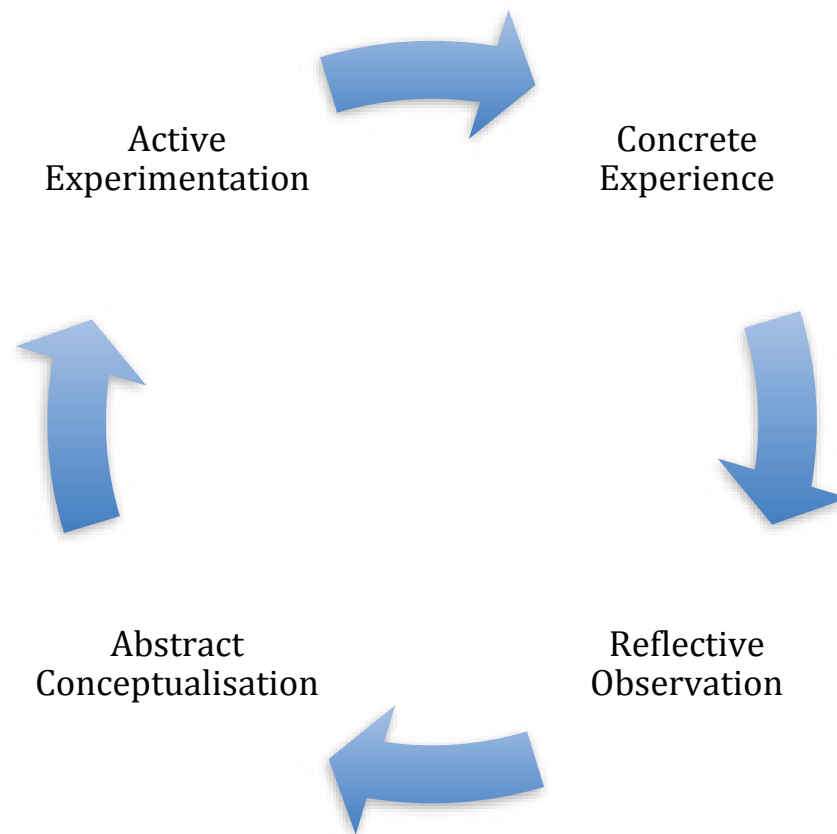


Figure 2.1: Kolb's Learning Cycle. Adapted from Kolb (1984: 33).

Outline of Project

Kolb's (1984) concept essentially describes the manner in which the research project currently functions in the Microeconomics module. However, primarily as a result of the insights gained during the Teaching Fellowship study, the approach will be more explicitly implemented when the next stage of re-positioning the research project as the main learning vehicle is put in place. The weighting of marks will reflect this change. Delivery of content will be carried out on a "flipped classroom" basis, the two one hour "lecture" slots being used to deal with issues arising, on an ongoing basis. Based on extensive examination of the literature dealing with group work and the use of wikis, the first two weeks will be devoted entirely to students creating a wiki focused solely on issues relating to the use of group work and wikis, using Wikipedia as one resource and an exemplar. The literature reveals that many studies utilising wikis have produced sub-optimal results because the presumption that "digital natives" will effortlessly adapt to the use of wikis in education has proved unreliable. Neither do wikis immediately dispose of all the well-recognised problems of group work (Elgort, Smith and Toland 2008; Cole 2009; Hughes 2011). The intention is to raise and clarify all these issues at an early stage and fully equip the participants for the main research project. Then, as a result of a peer review exercise, the students themselves will select the 3–5 best wikis to use as exemplars in the main part of the research project. Apart from these innovations the structure of the research project will essentially remain as above.

However, there will be very significant differences in the process. The two week mini project will, we hope, bring about a dynamic environment, resulting in high levels of engagement from the beginning. From the start of the main research project the groups will be meeting regularly in class time and interacting with the instructor. Rather than being presented with the content without a context, they will be acquiring it in response to their need to understand issues arising from their research. The instructor will be in a position to monitor and respond to issues arising. The groups will also be required to collaborate online from the beginning, facilitated by use of a wiki. This will serve the multiple purposes of encouraging increased collaboration, monitoring individual input, and the acquisition of an important skill. A key underlying motivation in these changes is to bring about greater engagement in the module from the beginning, thus increasing the levels of deep learning and reducing the likelihood of attrition.

Evaluation, Conclusions and Further Research

Based on ongoing feedback from participating students I have come to believe that the research project not only greatly furthers the students' understanding of Microeconomics but also has facilitated the development of a significant range of generic skills that I now know would tend to match up quite closely to the generic skills identified in much of the literature I have reviewed for this Teaching Fellowship study.

In the National Study on graduate competences (NAIRTL 2009) nearly 2,700 survey responses were gathered from the HE sector and employers with the purpose of ranking a comprehensive range of generic competences on levels of importance.

The highest rankings were given to:

- the ability to apply knowledge in a practical situation
- interpersonal and interaction skills
- the ability to work as part of a team.

A wide range of associated competences, such as the ability to identify, pose and solve problems, oral and written communications skills, ability to self-organise and time-manage were also highly ranked. A close examination of completed research projects was carried out for the purposes of this study. Also, each student is typically requested to complete a one page Reflective Summary, focusing on their individual experience of the process. These were not specifically compiled for this study and will therefore not be presented as primary data. However, they are useful to provide general insights and were closely examined for that purpose.

From an examination of this material, it can be reasonably concluded that a number of generic skills had been acquired or further developed through the process including the skills of:

- working within a team
- working independently on specific elements
- creating knowledge on a collaborative basis
- Information/library search online and offline
- critically analysing research sources
- extracting key points from research sources
- using key points to construct well-written report
- high-quality live presentation of results live
- working collaboratively online
- managing own time effectively.

Examination of the individual Reflective Diaries indicated a level of apprehension in many cases prior to engaging in group work. Also, there were reports of finding the group work experience stressful. However, it was also often cited as enjoyable, and, sometimes, both simultaneously. In some cases contrasts were noted between the experience of working alone on assignments in other modules and the group experience. Preferences in these cases tended to be mixed, generally tending to favour group work. In many cases acquisition of one or more of the skills listed above was specifically noted.

A number of general themes emerged on close reading of the Reflective Diaries. A strong one was the importance of good communications, using the entire range of available media. Facebook was widely used. Similarly, the importance and difficulty of arranging regular meetings was stressed. It was clear that those who made an early start and committed to the project had an overall better experience. Also, it was clear that engagement with the research project brought about a greater sense of engagement with the module. Two other strong themes were the importance of fairness in allocating work within the groups and the need for all members to "pull their weight". In some cases non-performing individuals were identified.

Learning from each other and especially from those who had already done economics was frequently emphasised. A striking feature was the friendships that had been generated or intensified through the process. Overall, even where prior apprehension or stress during the process was indicated, there was widespread explicit recognition that the capacity to work in groups was an essential competence that would be necessary in the academic space and, later, in the work space, and it was welcomed on that basis. It is hoped that a quantitative survey of participants' attitudes to group work will become available for analysis for the web-based version of this report. Examination of the above material has influenced the design of the next stage of the overall project which will investigate the effectiveness of the modified research project in its role as the main learning vehicle of the Microeconomics module.

Recommendations to DIT

More definitive recommendations will be possible when the next stage of the research is completed. However, it is possible at this stage to make the overall observation that many reports, on top of the ones referenced above, as well as research projects by DIT colleagues, have convincingly made the case that the learning outcomes from the experiential learning approach, which is already embedded in the Microeconomics module, correlate strongly with the skill set that has been identified as critical to the success of the individual graduate and the country as a whole, on a social as well as economic basis. Given that, it seems sensible to recommend an institution-wide research programme that would examine the feasibility of presenting all first year students with the opportunity of developing their learning within such a pedagogic paradigm.

Proposed future work

The research project on the Irish housing market from 1994 will be implemented as the main learning vehicle of the Microeconomics module for 2013-2014 and researched further.

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